

REMARKS

The present Response is intended to be fully responsive to all points of objections and/or rejections raised by the Examiner and is believed to place the application in condition for allowance. Applicants assert that the present invention is new, non-obvious and useful. Prompt reconsideration and allowance of the claims are respectfully requested.

Status of the Claims

Claims 10-16 are currently pending.

Claims 1-9 have been cancelled.

Remarks to Claim Rejections

Claim Rejections - 35 USC §103

The November 26, 2010 Office Action rejects claims 10-14 and 16 as being unpatentable under 35 U.S.C. §103(a) over Uesugi (US 4873413) in view of Jersch (Applied Physics A 66, pp. 29-34 (1998)).

Applicants respectfully disagree.

It is respectfully submitted that independent claim 10 recites distinctive features and elements that are not taught, suggested, or even implied by references Uesugi and Jersch, alone or in combination. Such distinctive features and elements include, *inter alia*, “exposing the tip ... that the tip intensifies an electromagnetic near-field created through a surface Plasmon resonance to such an extent that the vapour is decomposed ...”, and “the light beam at the tip ... is not enough to decompose the vapour”.

The Office Action alleges that Uesugi teaches a method for direct writing a layer of material onto a substrate by using a lens to focus a laser beam to an intensity to cause thermal decomposition of a precursor. The Office Action then contends that Jersch teaches a FOLANT technique which creates electromagnetic near field at an AFM tip through surface Plasmon resonance. Based upon the above, the Office Action draws conclusion that it would have been obvious for a person skilled in the art to use FLOANT

technique taught by Jersch in Uesugi to arrive at the above distinct features of the present invention.

Applicants respectfully disagree.

Applicants would like to respectfully point out that neither Uesugi nor Jersch teaches, suggests, or even implies using an electromagnetic near field created by surface Plasmon resonance to decompose a CVD suitable vapour. The electromagnetic near field created by surface Plasmon resonance in Jersch is used to cause surface modification of the substrate. Jersch never teaches decomposing any CVD suitable vapour. On the other hand, Uesugi teaches decomposing a precursor but such decomposition is caused by a focused laser beam and not by an electromagnetic near field created by surface Plasmon resonance. None of the references teaches that the electromagnetic near field created by surface Plasmon resonance may be possibly used in decomposing a CVD suitable vapour.

Applicants agree that Uesugi teaches decomposing a precursor using a focused laser beam. However, this teaching, by itself, is not any indicative that electromagnetic near field created through surface Plasmon resonance may be used to achieve the same goal. This is because Uesugi relies on the far-field of a lens to create the focused laser beam while Jersch relies on the near-field (not far-field) of the SFM tip through surface Plasmon resonance. The focused laser beam (in Uesugi) and the electromagnetic near-field (in Jersch) are created based upon entirely different physics and, as a result, have different strength and different field gradient. The focused laser beam of far-field of a lens (in Uesugi) is not substitute or even equivalent to the electromagnetic near-field of a tip (in Jersch). In other words, what applies to the focused laser beam (such as it may be used to decompose a precursor) does not automatically mean that the same application is equally applicable to the electromagnetic near-field in Jersch, in the absence of such explicit teaching. Nowhere in the references teaches that the electromagnetic near-field may be used, just as a focused laser beam, to decompose the CVD vapour. Applicants respectfully submit that the Office Action is relying upon hindsight obtained from the instant application in making the above allegation and thereby making the obviousness rejection, and such hindsight is impermissible according to MPEP 2145.

Furthermore, Applicants would like to point out that neither Uesugi nor Jersch teaches that “an intensity of the light beam at the tip of the Atomic Force Microscope is not enough to decompose the vapour”. To the exact opposite, and admitted by the Office Action, Uesugi explicitly teaches focusing the laser beam to intensify and cause thermal decomposition of the precursor, which is contrary to what are specifically recited in claims 1, 13, and 20, and contrary to the statement made by the Office Action below.

The Office Action alleges, in page 4, that “it is readily apparent that the light beam itself would not be strong enough to decompose the vapour, even at the tip” because otherwise it will make “the AFM intensification superfluous to the process, since it would not control where the deposition occurs”. Applicants respectfully disagree.

Applicants would like to point out that the above statement made by the Office Action has no material support by either Uesugi or Jersch. Neither the Office Action has provided any evidence as to why the above statement is obvious absence of any possible hindsight obtained from the present application. In fact, to the contrary, Uesugi is all about using focused laser beam that is strong enough to decompose the vapour. To accept what is alleged by the Office Action as a true statement would inevitably lead a person skilled in the art to conclude that the invention disclosed by prior art Uesugi is not operable because Uesugi does teach a laser beam that is strong enough to decompose the vapour. Therefore, the Office Action is placing doubt on Uesugi as a valid prior art.

In view of the above, it is respectfully submitted that the above distinct features of claim 10, among others, are not disclosed by Uesugi and Jersch, alone or in combination. Therefore, claim 10 is patentable.

Claims 11-16 depend from independent claim 10 and include all the distinctive features of claim 10, in addition to other distinguishing features and elements. Claims 11-16 are patentable at least for the same reasons as discussed above with regard to claim 10.

In view of above remarks, Applicants respectfully request that rejections of claims 10-16 made under 35 U.S.C. §103(a) be withdrawn.

Conclusion

In view of the preceding remarks, Applicants respectfully submit that all pending claims are now in condition for allowance. Favorable reconsideration and allowance of the claims are respectfully requested.

Applicants are paying a fee for the filing of a Request for Continued Examination and a fee for the filing of request for a one-month time extension. No other fees are believed to be due in connection with this paper. However, if there are any such fees due, please charge any such fees to the deposit account No. 09-0458.

Respectfully submitted,

/Yuanmin Cai/

Yuanmin Cai, Ph.D.
Agent for Applicants
Registration No. 56,513

Dated: February 4, 2011

INTERNATIONAL BUSINESS MACHINE CORPORATION

Intellectual Property Law Department, East Fishkill
2070 Route 52, Bldg-321, Zip-482
Hopewell Junction, NY 12533
Tel: (845) 894-8469
Fax: (845) 892-6363